



Sleep: The Risk of Suicidal Behaviors

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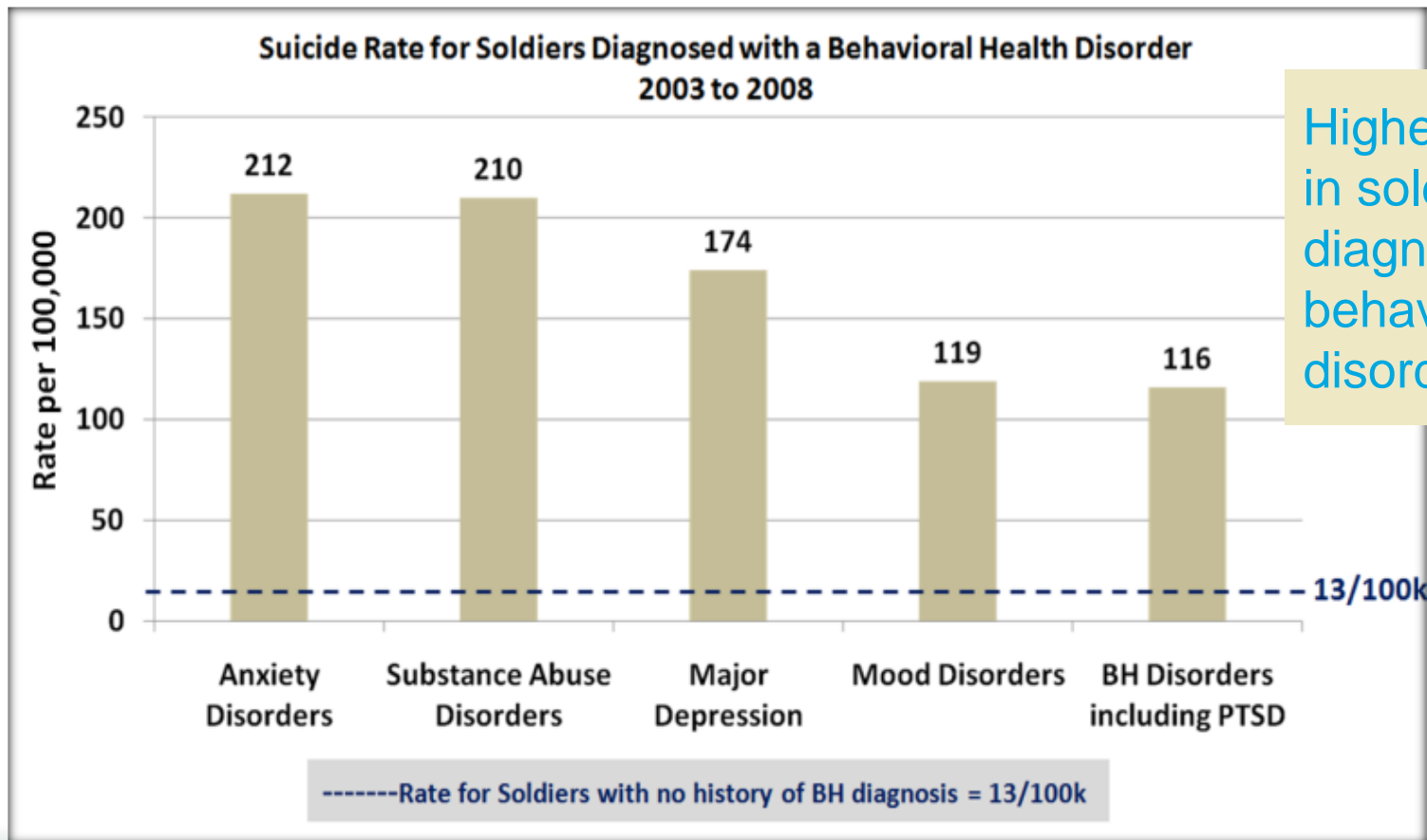
Discussion Points

- Overview of sleep problems and suicide
- The relationship between sleep and suicide
- Comorbid conditions and sleep
- Treatment of sleep disorders
- Behavioral strategies

Suicide Impacts the Department of Defense (DoD)

- Secretary of Defense Memorandum May 10, 2012—
Secretary of Defense is “deeply concerned about suicide in the military, which is one of the most complex and urgent problems facing this Department.”
- Suicide is related to several psychological health disorders such as major depressive disorder and posttraumatic stress disorder (PTSD)
(DODSER, 2010)
- Impacts operational and mission readiness

Psychological Health Conditions Linked to Suicides in Soldiers



Higher suicide rate
in soldiers
diagnosed with
behavioral health
disorders

Sleep Deprivation/Disorders

- 50 to 70 million Americans with sleep disorder (IOM, 2007)
- Linked to PTSD, mild traumatic brain injury (m/TBI), depression, suicide and alcohol abuse, lowered immune system functions, tobacco use and caffeine abuse
- 20 percent of car crash injuries linked to fatigue and sleeplessness (IOM, 2007)
- Most (72%) Soldiers reported short or very short sleep duration (Luxton et al, 2011)
- 11.4% of Soldiers reported taking medications for sleep in theater (J-MHAT 7, 2010)
- Causes of sleep interference were poor sleep environment and nighttime duties in theater (J-MHAT 7, 2010)

Sleep-related Outcomes

Long-term sleep deprivation can result in:

- Depression
- Cognitive impairment
- Psychosis
- Hyper vigilance
- Impulse control problems
- Physical problems
(ulcers, immune system, weight gain)

Impact of Sleep Issues on Suicide Risk

- **Sleep duration → Suicide attempters (SA)**

(Cross-sectional) (Blasco-Fontenilla, et al, 2011)

- Short sleep more prevalent in SA (37%)
- Short sleep associated with major depression and generalized anxiety disorder

- **Short sleep → SA and suicidal ideation**

(Cross-sectional) (Goodwin and Marusic, 2008)

- Short sleep associated with both
- Adjusted for depression, alcohol dependence, bipolar disorder etc.

Impact of Sleep Issues on Suicide Risk

■ Nightmares → Suicide

(Prospective) (Tanskanen, et al, 2001)

- General population
- Occasionally having nightmares increased risk of suicide
- Controlled for symptoms of insomnia, depressed mood, life stress and anxiety

Impact of Sleep Issues on Suicide Risk

■ Nightmares → Suicidality

(Cross-sectional) (Sjorstrom, Waern and Hetta, et al, 2007)

– Within suicide attempters

- 89% report sleep disturbance e.g., difficulties initiating sleep and nightmares most common
- Nightmares associated with suicidality
- Controlled for depression, posttraumatic stress disorder, psychotic disorders, etc.

Sleep Related Problems and Suicide in the Military

■ **Insomnia → Suicidal ideation and behavior**

(Cross-sectional and Longitudinal) (Ribeiro, et al, 2011)

- 311 individuals referred for severe suicidality from medical facilities associated with U.S. Army medical center
 - Symptoms of insomnia were associated with suicidal ideation
 - Insomnia symptoms predicted suicidal ideation

■ **Sleep problems → Suicidal thinking** (Luxton and Rudd, 2010)

- Active duty and activated reserve and National Guard service members
- Sleep disturbance associated with suicidal thinking

Sleep Related Problems and Suicide in the Military

- **Short sleep duration (SSD) → Suicide attempts**

(Luxton, et al, 2011)

- U.S. Army Infantry Post
- Also associated with symptoms of depression, posttraumatic stress disorder, panic syndrome
- High-risk health behaviors such as abuse of tobacco and alcohol

Conclusions

- **Sleep associated with health and suicidal behavior in general and selected population**
- **Must account for co-morbidities**
- **However, directionality of relationship between sleep and suicide not well-defined**

Are Sleep Disturbances a Symptom of a Psychiatric Disorder or a Comorbid Disorder? Clinical Implications

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The views expressed in this presentation are those of the author and do not reflect the official policy of the Department of Defense or U.S. Government

Disclaimer

Given the Association of Insomnia & Nightmares with Suicide-Related Behaviors

Insomnia in the Population

Insomnia symptoms

- Overall prevalence 30-48%
- Often or always: 16-21%
- Moderate to extreme: 10-28%

Insomnia symptoms + daytime consequences 9-

15%

Insomnia
diagnosis
6%

Direct economic costs
of insomnia in the US
are estimated ~ \$14 billion

Ohayon, *Sleep Med Rev*, 2002

Psychiatric or Medical Disorders with Risk of Suicide-Related Behaviors

- Depression
- PTSD
- Anxiety Disorders
- Substance Use Disorders
- Pain
- Mild Traumatic Brain Injury (mTBI)

Sleep Disturbances Linked to Psychiatric Disorders

- **Depression: insomnia or hypersomnia nearly every day (MDE A4)**
- **PTSD: difficulty falling or staying asleep (D1); nightmares (B2)**
- **GAD: sleep disturbance (C6)**
- **Panic Disorder: Panic attacks (nocturnal panic attacks)**

Sleep Disturbances Linked to Medical Disorders

- **Mild TBI / Postconcussion syndrome**
 - (insomnia in WHO ICD-10; disordered sleep in DSM-IV-TR)

- **Pain**
 - Pain disturbs sleep
 - Disrupted sleep increases pain

PTSD: Are Sleep Disturbances Symptoms or Disorders?

- **Disturbed sleep is prevalent**
 - Nightmare prevalence: ~50-70%
 - Insomnia prevalence: ~40-50%
- **Disturbed sleep is a common residual symptom after PTSD treatment (both pharmacological & psychological)**
- **Disturbed sleep exacerbates PTSD symptom severity**
- **Treatment for disturbed sleep in PTSD improves sleep & alleviates PTSD levels**

Depression: Are Sleep Disturbances Symptoms or Disorders?

- **Disturbed sleep is prevalent**
- **Poor sleep contributes to depression severity**
- **Associated with poor response to treatment**
- **Common residual symptom after treatment**
- **Residual insomnia predicts relapse & recurrence**
- **Treatment of insomnia associated with higher rates remission of depression & insomnia**

Sleep and Substance Use Disorders

- **Individuals with substance dependence experience a variety of sleep disturbances**
 - Increased WASO for smokers
 - Increased insomnia, sleep fragmentation with chronic alcoholism
- **Abstinence associated with changes in sleep patterns**
- **Insomnia after successful alcohol treatment may increase risk of relapse**
- **Many individuals w/o identified substance misuse will self-medicate in order to sleep**

Other Sleep Disorders and Psychiatric or Medical Disorders

- **PTSD, mTBI, and comorbid PTSD & mTBI have increased risk of breathing-related sleep disorders (obstructive sleep apnea)**
- **PTSD associated with increased risk of:**
 - Periodic limb movements in sleep
 - REM-sleep behavior disorder
 - Sleep paralysis
 - Hypnagogic / hypnopompic hallucinations
- **mTBI has also been associated with circadian rhythm sleep disorders**

Polypharmacy and Drug Side Effects

- **Some SSRIs may increase insomnia**
- **SSRIs may increase male erectile disorder, however, erectile dysfunction drugs can have dangerous interactions with prazosin used for treatment of nightmares**
- **Propranolol may increase nightmares**
- **Both caffeine and nicotine are stimulants which can disrupt sleep**
- **Alcohol can fragment sleep**

Clinical Implications

- **Screen for sleep disorders at intake**
 - PSQI (Pittsburgh Sleep Quality Index)
 - Epworth Sleepiness Scale Insomnia Severity Index
 - SLEEP-50
- **Adequate referral or treatment**
 - Sleep clinic for polysomnography (PSG) evaluation for sleep apnea

Treatment

- **Insomnia**
 - CBT-I: cognitive behavioral therapy for insomnia
 - BZD-Receptor Agonists / Melatonin Agonists
- **Nightmares**
 - Imagery Rehearsal Therapy
 - Prazosin

Thought Questions

- **When does the symptom of insomnia become the diagnosis?**
 - Sporadic symptom
 - Situational (deployment, especially to theater of war)
 - Diagnosis
- **What is the relationship of insufficient sleep to insomnia?**
 - Is insufficient sleep a choice, or not?
- **What is the role of self medication efforts?**
 - Nicotine and Caffeine for waking
 - Alcohol for sleeping

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Sleep Hygiene

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Progression of Sleep Disorder

Sleep deprivation is a function of inadequate **amount** and insufficient **quality** of sleep

Side Effects

Impaired reflexes

Cognitive dysfunction

Behavioral irritability

Affective instability

Sleep

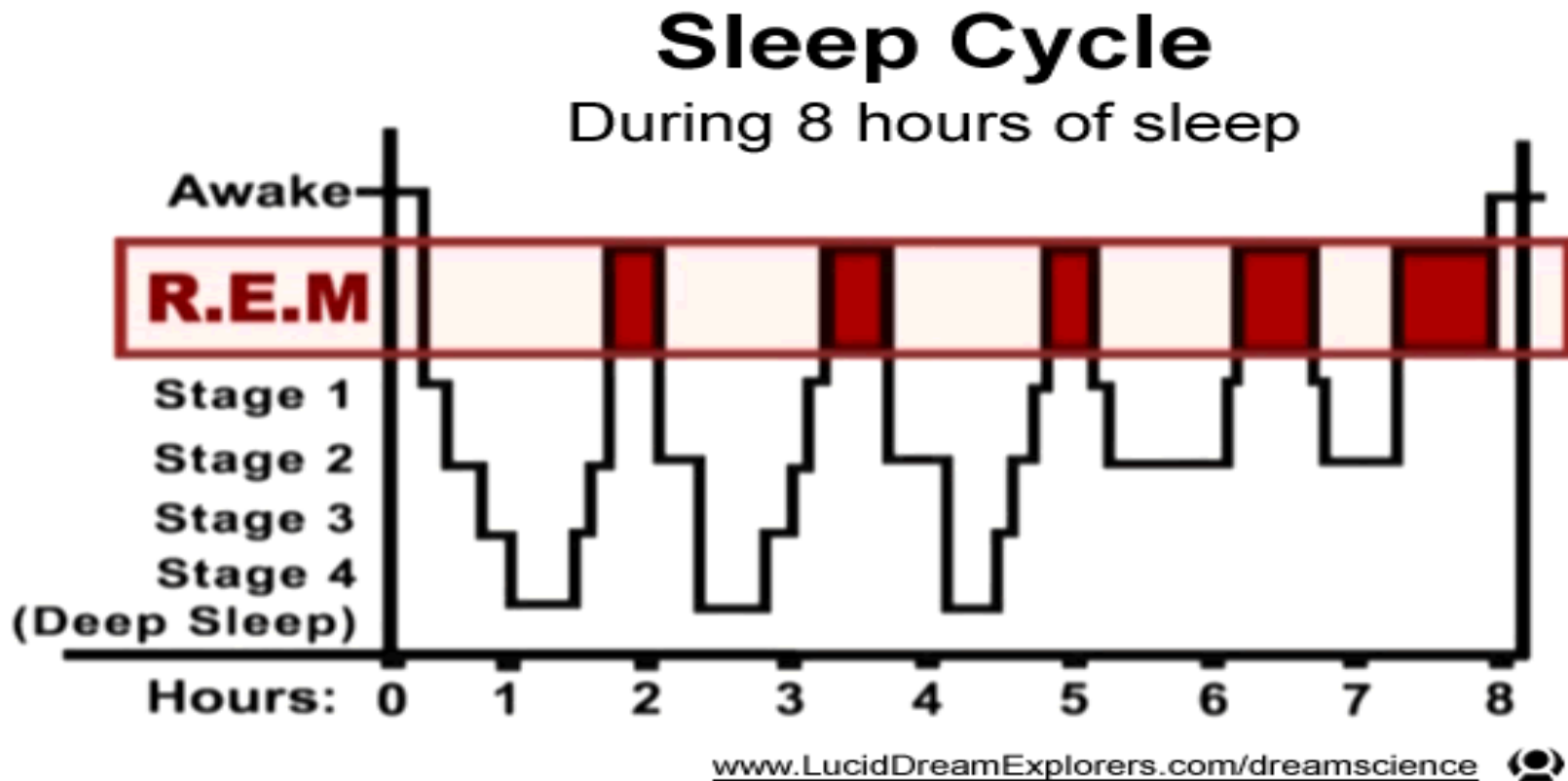
- **Basic Sleep Facts**

- Adults (18-plus) need 6.5 – eight hours
- Five stages of sleep
- Sleep is part of the body's natural circadian rhythm
- Sleep restores and refreshes your body and brain
- Helps prepare the body for peak performance
- Consolidates learning
- Enhances information processing

5 stages of sleep

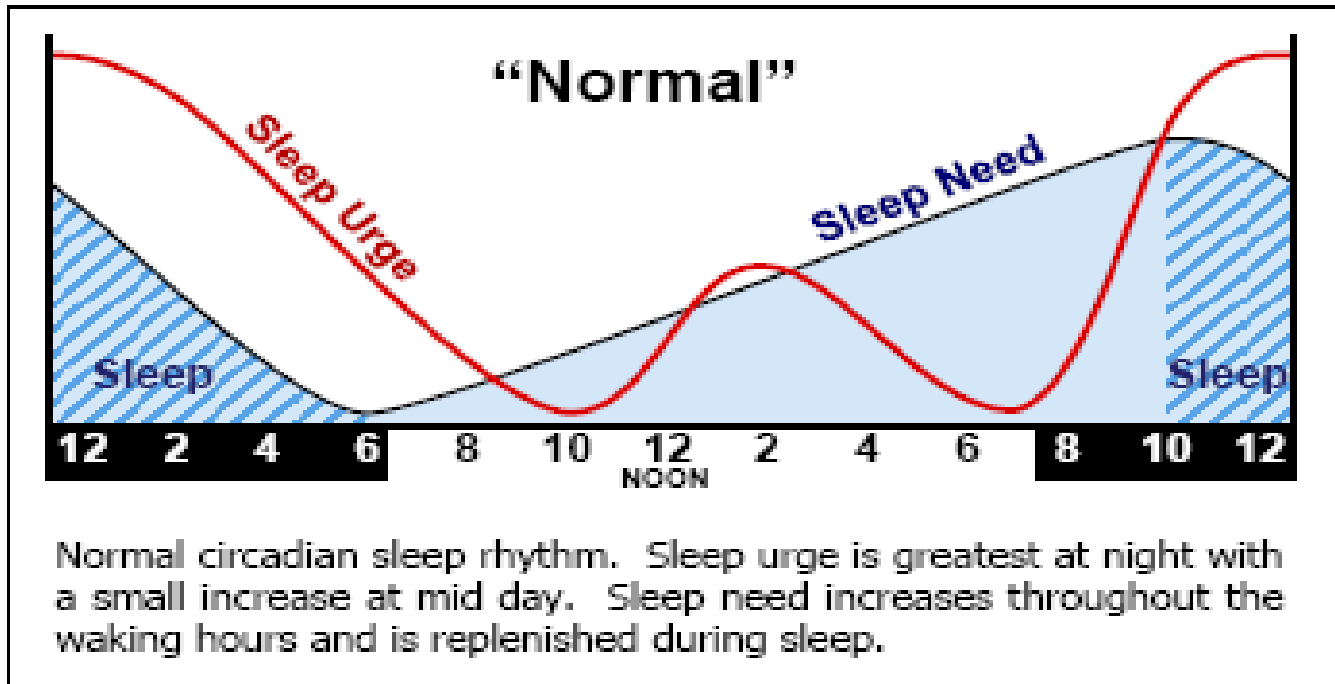
- Stage one or two shallow sleep: 30 minutes after falling asleep
- Stage three to four middle to deep sleep
- REM or dream sleep: about 70 to 90 minutes after falling asleep

Sleep



Deep sleep restores and refreshes your body and mind

Sleep



Circadian rhythm: “Sleep urge is greatest at night, with a small increase at mid day. Sleep need increases throughout waking hours.”

Sleep

- **Four factors** to consider when addressing proper sleep:
 - Quantity
 - Quality
 - Optimal time for sleep
 - Optimal amount of sleep needed

Cognitive Behavioral Treatment- Insomnia (CBT-I) Interventions

- Stimulus control
- Sleep restriction
- Cognitive therapy
- Relaxation training
- Sleep hygiene

Sleep – Healthy Habits

- Establish a regular bed time and getting up time
- Allow time for your mind and body to wind down
- Do a brain dump before going to bed
- Avoid getting frustrated if unable to fall asleep – get out of bed
- Go to bed when sleepy
- Get up in the morning at the same time

Sleep – Healthy Habits

- Assess your bedroom
- Avoid going to bed hungry
- Avoid heavy, spicy food before bedtime
- If napping, nap regularly/consistently
- Exercise regularly
- Avoid excessive use of alcohol after dinner
- Avoid caffeine
- Quit smoking

Questions

